NORTH INLET-WINYAH BAY NATIONAL ESTUARINE RESEARCH RESERVE

REFINING THE NERRS CLIMATE CHANGE VULNERABILITY ASSESSMENT TOOL

Stay in touch

The NERRS Science Collaborative is committed to sharing information about the projects we fund in the most effective way we can. Updates about this project will be communicated through nerrs.noaa.gov, webinars, conferences, and meetings. If you would like to stay in touch with this project, contact our program coordinator, Cindy Tufts: cindy.tufts@unh.edu

For information about the applied science, contact Jennifer Plunket, Stewardship Coordinator, North Inlet-Winyah Bay NERR, at 943.904.9033, or jen@belle.baruch.sc.edu

For information about the collaborative aspect of this project, contact Kiersten (Madden) Stanzel, Research Associate, Mission-Aransas NERR at 361.813.1401, or kiersten.madden@utexas.edu

For an overview of CCVATCH go to: www.northinlet.sc.edu/stewardship/CCVATCH/Overview.html

What's happening?

A team led by the North Inlet-Winyah Bay National Estuarine Research Reserve (NERR) and the Chesapeake Bay Virginia NERR has received $142,286 to pilot and refine the Climate Change Vulnerability Assessment Tool for Coastal Habitats (CCVATCH), a decision support tool, developed in the NERRS, that assesses vulnerability of habitats to climate change.

The team is working collaboratively with local habitat managers, decision-makers, and researchers to apply CCVATCH to generate vulnerability assessment scores for coastal habitats near NERR sites in North Inlet-Winyah Bay, South Carolina, and Chesapeake Bay, Virginia.

Researchers at the Chesapeake Bay, Virginia NERR collect data about marsh impacts following a nor'easter. This type of local data and knowledge can be used to help evaluate habitat vulnerability to climate change in the CCVATCH.

Why this project?

Coastal habitats are at risk from the impacts of climate change, including sea level rise, more frequent and severe storms, erosion, invasive species, and decreases in water quality. To protect these habitats and the services they provide, managers need to be able to identify which habitats are the most likely to be adversely affected by climate change.

Information like this is key to policy discussions about the effectiveness of current regulatory programs and how they might be adapted to meet the additional threats to coastal resources posed by climate change. To meet this need, stewardship coordinators from the NERRS have worked collaboratively with scientists to design the CCVATCH for habitat managers, decision makers, and researchers who are tasked with developing coastal conservation, management, and restoration plans and policies. The tool is designed to support decision making by providing managers with a means of identifying habitats that are most likely to be affected by projected changes in climate, and provide insight into why these habitats are vulnerable.

This project team is testing and refining the CCVATCH so that resource managers can use it to complete vulnerability assessments in coastal habitats, and better understand what makes habitats more likely to be vulnerable.

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National Estuarine Research Reserve System Science Collaborative

"Ghost Trees" on Catlett Island, Virginia (left), and "Boneyard Trees" on South Carolina's beachfront are examples of naturally changing habitats over time. Sea level rise and increased storm surge accelerate the rates of change. Coastal habitats may not be able to adapt, and could be lost.

About the funder

The NERRS Science Collaborative puts Reserve-based science to work for coastal communities coping with the impacts of land use change, stormwater, non-point source pollution, and habitat degradation all in the context of a changing climate. Our threefold approach to connecting science to decision making includes:

• Using a competitive RFP, we fund projects that incorporate collaboration and applied science to address coastal management problems identified as priorities for Reserves and their communities.

• Transfer of knowledge: Through our transfer program, the science we fund is shared throughout the NERRS and the communities they serve.

• Graduate education: Through TIDES (Training for the Integration of Decision Making and Ecosystem Science), a non-thesis Master's degree program hosted by the University of New Hampshire, we train the next generation of professionals to link science to coastal decision making.

The program operates by a cooperative agreement between the University of New Hampshire (UNH) and the National Oceanic and Atmospheric Administration.

Learn more at....
nerrs.noaa.gov/ScienceCollaborative.aspx

How will this project work?

CCVATCH is a spreadsheet-based decision support tool that integrates local data and knowledge with climate change research, predictions, and assessment to provide an evaluation of habitat vulnerability. It evaluates how changes in precipitation, air and water temperature, and storm frequency and severity will affect non-climate stressors such as invasive species, nutrients, and sediment.

This project team will use an adaptive, collaborative learning framework to engage local stakeholders and scientists in refining and demonstrating the use of CCVATCH. Their approach includes the following elements:

- Survey local stakeholders' research and data needs to ensure relevance of CCVATCH outputs to their work;
- Establish a collaborative online site for data sharing and coordination of stakeholder feedback;
- Engage local stakeholders and researchers in a kickoff workshop that includes training on tool usage;
- Work with experts and researchers to complete the tool for habitats selected by local stakeholders;
- Conduct wrap-up workshops to discuss outcomes of the pilot demonstrations and applications of the tool;
- Assess applicability of final results and develop final products.

As a result of this work, the project team will develop a refined habitat vulnerability assessment tool that includes a scoring sheet and resources for information on the effects of climate change on coastal habitats.

They also will document the collaborative process and lessons learned about using CCVATCH and applying its results to conservation planning, habitat management, and restoration. Ultimately, they will package this information in a final report for NOAA, the Reserve System, and its partners.

More information about CCVATCH is available at www.northinlet.sc.edu/stewardship/CCVATCH/Overview.html